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EXAMINER				
TYLER, NATHAN K				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/750,839

Applicant(s)

EOM, YOON-SEOP

Examiner

NATHAN K. TYLER

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12-22, 24-27 and 29-34 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-10, 12-22, 24-27 and 29-34 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 09 July 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

Applicant's arguments, filed 02 April 2008, with respect to the objection to claim 33 have been fully considered and are persuasive. The objection to claim 33 has been withdrawn.

Applicant's arguments with respect to Hewitt (GB 2371386 A) have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections - 37 CFR 1.75(a)

1. The following is a quotation of 37 CFR 1.75(a):

The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.

2. Claim 33 is objected to under 37 CFR 1.75(a) as failing to particularly point out and distinctly claim the subject matter which the applicant regards as his invention or discovery.

Regarding **claim 33**, the term "the first image processor" at line 1 lacks an antecedent basis. However, it appears from the context of the claim when read in light

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of the specification that "the first image processor" is in fact referring to the "first data image generator" first introduced at line 2 of claim 26; and this will be assumed for examination purposes.

Additionally, the term "the second image data processor" at line 2 lacks an antecedent basis. However, it appears from the context of the claim when read in light of the specification that "second image data processor" is in fact referring to the "second image generator" first introduced at line 4 of claim 26; and this will be assumed for examination purposes.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 4, 8, 12, 13, 16, 20, 25-30, and 32-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Shimura et al. (EP 575169 A1).

Regarding **claims 1, and 13**, Shimura discloses a color image forming method and corresponding apparatus comprising: generating first image data image-processed into a format suitable for use in a color image forming engine by a first image processor disposed within the color image forming apparatus (Fig. 5, Rasterizer 202); generating second image data image-processed into a format suitable for use in the color image forming engine by a second image processor disposed outside the color image forming apparatus (with reference to Fig. 5: "a font rasterizer (which functions as a first rasterizer) 104, a graphics rasterizer (which functions as the first rasterizer) 105" at column 7, line 56); and receiving the first and the second image data and selectively outputting at least one of the received first and second image data to the color image forming engine via an image data controller ("CPU 1 analyzes the print job in accordance with the resource data of the printer 1500 to dynamically determine the ratio of share of the parallel processing between the first rasterizer (the function of the CPU 1) and the second rasterizer (the function of the CPU 14), and the second rasterizer or the first rasterizer parallelly processes the rasterization information in the print job in accordance with the determined ratio of share of the parallel processing so that the print job is efficiently processed" at column 6, line 10. Therefore the image data will be processed either by the image processor in the printer, or the image processor in the host computer. The processed image data from both the first and second image processors is received by "print controller" numeral 205. Print controller 205 outputs

one of the two received image data to the "printer mechanism" numeral 20 shown in Fig. 4) disposed within the first image processor (The rasterizer and print controller shown in Fig. 5 are realized using the CPU 14 shown in Fig. 4).

Regarding **claims 4 and 16**, Shimura discloses that the first image processor is slower than the second image processor (As stated in the grounds for rejection for claim 1, Shimura performs load balancing to achieve rasterization as quickly as possible by assigning rasterization to either the processor in the printer or the processor in the host computer. Therefore there is a case where the first image processor is slower than the second image processor).

Regarding **claims 8 and 20**, Shimura discloses driving, via the color image forming engine, mechatronics to form the color image (see Fig. 3).

Regarding **claims 12 and 25** Shimura discloses that the second image processor is slower than the first image processor (As stated in the grounds for rejection for claim 1, Shimura performs load balancing to achieve rasterization as quickly as possible by assigning rasterization to either the processor in the printer or the processor in the host computer. Therefore there is a case where the second image processor is slower than the first image processor).

Regarding **claim 26**, Shimura discloses a color image forming system comprising: a color image forming apparatus having therein a first image data generator which generates first image data (Fig. 5, Rasterizer 202); a second image data generator which generates second image data and is external to the color image forming apparatus (with reference to Fig. 5: "a font rasterizer (which functions as a first

rasterizer) 104, a graphics rasterizer (which functions as the first rasterizer) 105" at column 7, line 56); an image data controller disposed in a first image processor that includes the first image data generator and which receives the first and the second image data, and selectively outputs the first and the second image data ("CPU 1 analyzes the print job in accordance with the resource data of the printer 1500 to dynamically determine the ratio of share of the parallel processing between the first rasterizer (the function of the CPU 1) and the second rasterizer (the function of the CPU 14), and the second rasterizer or the first rasterizer parallelly processes the rasterization information in the print job in accordance with the determined ratio of share of the parallel processing so that the print job is efficiently processed" at column 6, line 10. Therefore the image data will be processed either by the image processor in the printer, or the image processor in the host computer. The processed image data from both the first and second image processors is received by "print controller" numeral 205. Print controller 205 outputs one of the two received image data to the "printer mechanism" numeral 20 shown in Fig. 4. The rasterizer and print controller shown in Fig. 5 are realized using the CPU 14 shown in Fig. 4); and a color image forming engine which receives the first and the second data from the image data controller and which is disposed in the color image forming apparatus ("The printer interface 19 converts the print data to a format compatible to the mechanism of the print unit 20 and outputs it").

Regarding **claim 27**, Shimura discloses a first image processor in which the first image data generator is disposed (Fig. 4, CPU 14).

Regarding **claim 28**, Shimura discloses a first image processor in which the image data controller is disposed (Fig. 4, CPU 14).

Regarding **claim 29**, Shimura discloses a second image processor in which the second image data generator is disposed (Fig. 4, CPU 1).

Regarding **claim 30**, Shimura discloses a host computer in which the second image processor is disposed (Fig. 4, "host computer").

Regarding **claim 32**, Shimura discloses an engine mechatronics unit, wherein the color image forming engine includes an engine controller which receives the first and the second image data and which controls the engine mechatronics unit to form an image (Fig. 3 shows mechatronics controlled by Printer I/F and Printer Mechanism shown in Fig. 4).

Regarding **claim 33**, Shimura discloses a first image processor in which the first image data generator is disposed (Fig. 4, CPU 14) and a second image processor in which the second image data generator is disposed (Fig. 4, CPU 1), wherein the first image processor is faster than the second image data processor (see grounds for rejection for claim 12).

Regarding **claim 34**, Shimura discloses a first image processor in which the first image data generator is disposed (Fig. 4, CPU 14) and a second image processor in which the second image data generator is disposed (Fig. 4, CPU 1), wherein the second image processor is faster than the first image data generator (see grounds for rejection for claim 4).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 6, 7, 14, 18, 19, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Shimura and Ip (US 5600804 A).

Regarding **claims 2 and 14**, while Shimura discloses the limitations of claims 1 and 13, from which claims 2 and 14 depend respectively, Shimura does not disclose that the second image processor is a system expansion card which is insertable into the host computer.

Ip discloses an image processor that is a system expansion card which is insertable into a host computer (Fig. 2, numeral 27 "option board." "Option boards may also include... rasterizer boards so as to permit rasterization of page description language commands" at column 3, line 24).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to place the second image processor in the host computer taught by Shimura on a removable system board as taught by Ip, so that the second image

processor taught by Shimura may be upgraded, or more easily/cheaply replaced in the event of failure.

Regarding **claims 6 and 18**, the combination of Shimura and Ip as applied to claim 2 teaches that the second image processor operates according to a page description language (PDL) format (Shimura states: "At least one card slot, not shown, may be provided to permit the connection of... a card containing a program for interpreting a different printer control language" at column 5, line 58. Ip teaches that "Option boards may also include... rasterizer boards so as to permit rasterization of page description language commands" at column 3, line 24).

Regarding **claims 7 and 19**, the combination of Shimura and Ip as applied to claim 2 teaches that the second image processor has a video controller which operates according to the PDL format (see grounds for rejection for claim 6).

Regarding **claim 31**, while Shimura discloses the limitations of claim 30, from which claim 31 depends, Shimura does not disclose that the second image processor is a system expansion card insertable into the host computer.

Ip discloses a second image processor that is a system expansion card insertable into a host computer (see above grounds for rejection).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to place the image processor in the host computer taught by Shimura on a removable system board as taught by Ip (see grounds for rejection for claims 2 and 14).

7. Claims 3, 15, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Shimura and Ferlitsch (US 20040061892 A1).

Regarding **claims 3, 15, and 24**, while Shimura discloses the limitations of claims 1 and 13, from which claims 3 and 15 depend respectively, Shimura does not disclose that the second or first image processor is externally attached to the host computer or the image forming apparatus, respectively.

Ferlitsch discloses that the second image processor is externally attached to the host computer and the image forming apparatus (Fig. 11, "RIP Server" 150 externally attached to host computer "Client" 130 and image forming apparatus "Printer" 120).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to move either of the first or second image processors taught by Shimura to an externally attached server as taught by Ferlitsch, in order to remove the load of processing from the host computer or the printer's CPUs ("this configuration concentrates the resources needed for rasterization in one device that is capable of offloading raster processing from a number of clients and printers" at Ferlitsch paragraph 30, line 9).

8. Claims 5 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Shimura and Karaki (US 5699492 A).

Regarding **claims 5 and 17**, while Shimura discloses the limitations of claims 4 and 16, from which claims 5 and 17 depend respectively, Shimura does not disclose that the first image processor operates according to a graphic device interface (GDI) format.

Karaki discloses a rasterization processor that operates according to a GDI format (Fig. 1, rasterizer 17 and accompanying elements 15 and 19 operate on data from "GDI Module" 9).

As the system disclosed by Shimura rasterizes data to be used by a print engine, it would have been obvious at the time the invention was made to one of ordinary skill in the art to use the rasterization processor disclosed by Karaki as either the first or second image processor taught by Shimura. This would allow the Shimura system to rasterize data in a GDI format without the need for a higher level page description language, as GDI is native to the Microsoft Windows operating system and is very common ("MS-Windows by Microsoft Corp. is used as the operating system 7. This operating system 7 includes a graphic device interface... The GDI module 9 supplies the application 5 with a common graphic device interface (GDI) which is prescribed for the convenience of application development and which does not depends [sic] on output devices" at Karaki column 3, line 45).

9. Claims 9, 10, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Shimura and Sugisaki et al (US 5681642 A).

Regarding **claims 9, 10, 21, and 22**, Shimura discloses that the first and second image processors generate data suitable for use by a color electrostatic image forming device. Shimura does not disclose that the first or second image processor generates image data suitable for one of a single path mode and a multi-path mode of forming a color image.

Sugisaki discloses a color electrostatic printing system that uses a single path mode and a multi-path mode ("Usual recording system of color electrostatic plotter includes the single path system provided with four multineedle electrode heads (cyan, magenta, yellow and black) and respective developing devices and the multipath system provided with one multineedle electrode and four developing devices corresponding to said respective colors" at column 1, line 27).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to have the first and second image processors taught by Shimura generate data suitable for use in the single- and multi-path mode electrostatic printing system taught by Sugisaki, as the single- and multi-path modes of forming an image in an electrostatic color printer are well known and readily available ("Usual recording system of color electrostatic plotter includes the single path system... and the multipath system" at Sugisaki column 1, line 27).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NATHAN K. TYLER whose telephone number is (571)270-1584. The examiner can normally be reached on M-F 7:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Poon can be reached on 571-272-7440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/King Y. Poon/
Supervisory Patent Examiner, Art Unit 2625

/Nathan K Tyler/
Examiner
Art Unit 2625